

See also report on Ford engine based

SAT. JAN. 6 - 1917

Rpt. 13.

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# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6945

Port of NEWCASTLE-ON-TYNE Date of First Survey 24<sup>th</sup> Nov. 16 Date of Last Survey 19<sup>th</sup> Dec. 16 No. of Visits 10.

No. in Reg. Book on the Iron or Steel S. S. "Kriag Pajarsty" Port belonging to \_\_\_\_\_

Built at Wallsend Shipyard, Wallsend By whom Messrs Swan Hunter & Wigham Rickard When built 1916

Owners Russian Imperial Government Owners' Address \_\_\_\_\_

Yard No. 1021 Electric Light Installation fitted by J. Holmes & Co. When fitted 1916

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One coupled plant consisting of one Browett Lindley engine, 180 H.P., at 400 R.P.M., on 180 lbs S.P. coupled to one "Holmes" dynamo of 45 KW on 110 volts. One Diesel engine supplied by Skiffeld's, coupled to one "Holmes" dynamo, 50 KW, 110 volts.

Capacity of Dynamos. 680 Amperes at 454 Volts, whether continuous or alternating current continuous.

Where <sup>are</sup> Dynamos fixed Middle Platform, forward Engine Room Whether single or double wire system is used double.

Position of Main Switch Board near dynamos having switches to groups A.B.C.D. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each  
See special list attached.

If fuses are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch board to the cables of auxiliary circuits yes and at each position where a cable is branched or reduced in size yes and to each lamp circuit yes

If vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 100 per cent over the normal current

Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions yes If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit yes

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 215-25 3P, 4-32 2P, 16-8 2P arranged in the following groups :-

A	56	lights each of	25	candle power requiring a total current of	25.2	Amperes
B	20	lights each of	25	candle power requiring a total current of	16.5	Amperes
	6		32			
C	64	lights each of	25	candle power requiring a total current of	18.2	Amperes
D	44	lights each of	25	candle power requiring a total current of	32.5	Amperes
			32			
E		lights each of		candle power requiring a total current of		Amperes
2	Mast head lights with	1 lamp each of	32	candle power requiring a total current of	2.03	Amperes
2	Side lights with	1 lamp each of	32	candle power requiring a total current of	2.03	Amperes

Included above

3 Cargo lights of 3 arc lamps each taking 5 amperes candle power, whether incandescent or arc lights

If arc lights, what protection is provided against fire, sparks, &c. in hexagonal weatherproof lanterns.

Where are the switches controlling the masthead and side lights placed in Wheel-house

## DESCRIPTION OF CABLES.

aux cables carrying 125 Amperes comprised of 21 wires, each 101 S.W.G. diameter, .75 square inches total sectional area

Main cable carrying 25.2 Amperes, comprised of 19 wires, each 18 S.W.G. diameter, .034 square inches total sectional area

Branch cables carrying 12 Amperes, comprised of 4 wires, each 14 S.W.G. diameter, .014 square inches total sectional area

Branch cables carrying 14 Amperes, comprised of 4 wires, each 14 S.W.G. diameter, .014 square inches total sectional area

Leads to lamps carrying 28 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area

Cargo light cables carrying - Amperes, comprised of - wires, each - S.W.G. diameter, - square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

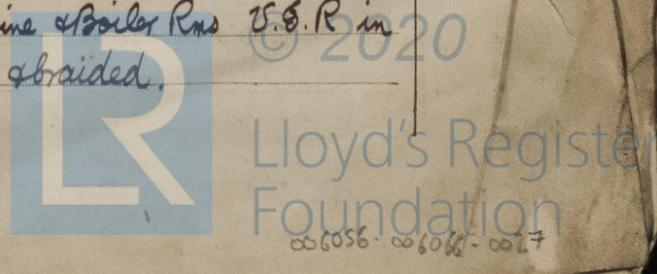
Conductors of tinned copper insulated with pure vulcanized india rubber, taped, armoured with steel wires braided & compounded overall

Joints in cables, how made, insulated, and protected none, looping in system carried out, or special connection boxes used.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances  Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage

Are there any joints in or branches from the cable leading from dynamo to main switch board

How are the cables led through the ship, and how protected In Saloon & Cabin Lead Covered, Engine & Boiler Rms U.S.P. in steel conduits, Main cables to section & distributing fuseboxes are armoured & braided.



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Armoured Braided

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armoured Braided

What special protection has been provided for the cables near boiler casings U.S.R. in screwed tubing

What special protection has been provided for the cables in engine room U.S.R. in screwed tubing

How are cables carried through beams bushed with fibre through bulkheads, &c. stuffing boxes

How are cables carried through decks in lead or iron deck tubes, flanged & made watertight

Are any cables run through coal bunkers yes or cargo spaces  or spaces which may be used for carrying cargo, stores, or baggage

If so, how are they protected Armoured Braided

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage no

If so, how are the lamp fittings and cable terminals specially protected

Where are the main switches and fuses for these lights fitted

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers no

Cargo light cables, whether portable or permanently fixed  How fixed

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

Is the installation supplied with a voltmeter yes (2), and with an amperemeter yes (2), fixed on main board

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, fuses, or joints of cables fitted in the pump room or companion

How are the lamps specially protected in places liable to the accumulation of vapour or gas

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

*J. H. Holmes & Co.* Electrical Engineers Date Dec 21, 1916

**COMPASSES.**

Distance between dynamo or electric motors and standard compass approx 40 ft.

Distance between dynamo or electric motors and steering compass 35 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>28</u>	Amperes	<u>inside</u>	feet from standard compass	<u>inside</u>	feet from steering compass
A cable carrying	<u>10</u>	Amperes	<u>approx 8</u>	feet from standard compass	<u>approx 8</u>	feet from steering compass
A cable carrying	<u>14</u>	Amperes	<u>16</u>	feet from standard compass	<u>13</u>	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power yes

The maximum deviation due to electric currents, etc., was found to be nil degrees on each course in the case of standard compass and nil degrees on each course in the case of the steering compass.

SWAN, HUNTER & WIGHAM RICHARDSON LTD.,  
*Richardson* Builder's Signature. Date 28/12/16

**GENERAL REMARKS.**

1 Pair of 4/15 Armoured Braided wires from Main Switchboard to Marconi Room.

Metal filament "Ceram" lamps fitted throughout excepting in navigation lanterns.

The installation was tested and found to work

*J.W.D. 8/1/17*  
*Wm. R. Austin*  
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute J.M.

Imp. 11.13—Transfer.